SERVICE MANUAL

BRÜEL & KJAER TYPE 7509 W/BZ 7075

DOUGLAS AIRCRAFT COMPANY

MCDONNELL DOUGLAS CORPORATION

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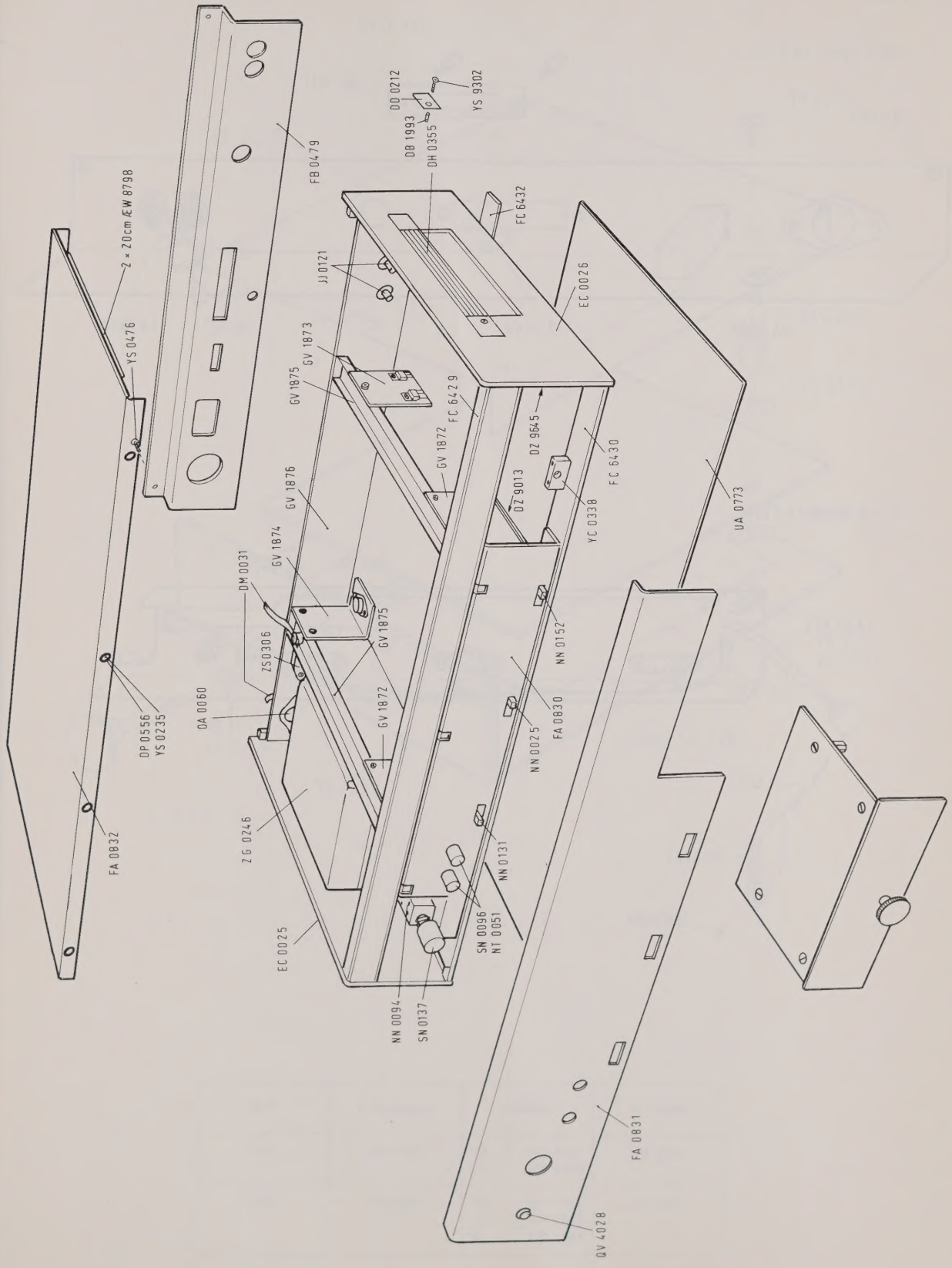
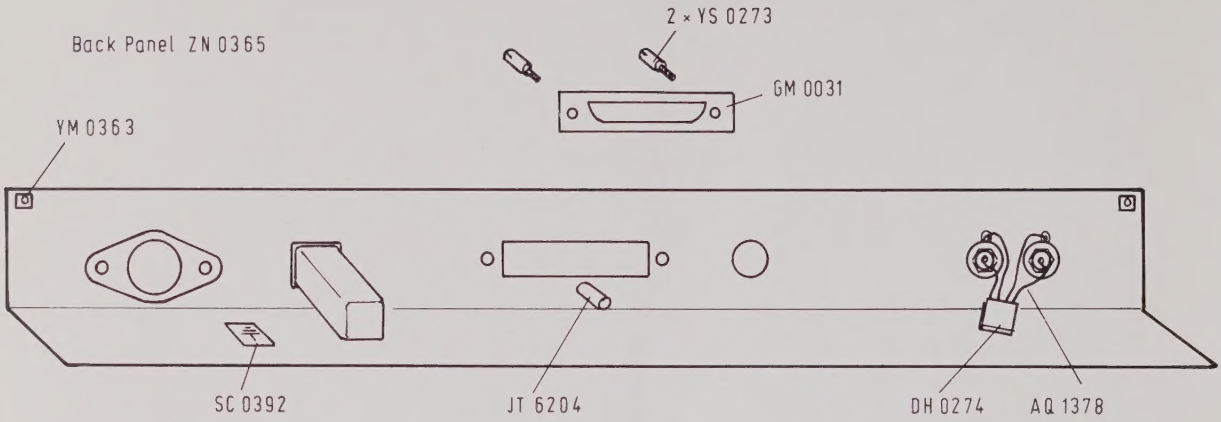
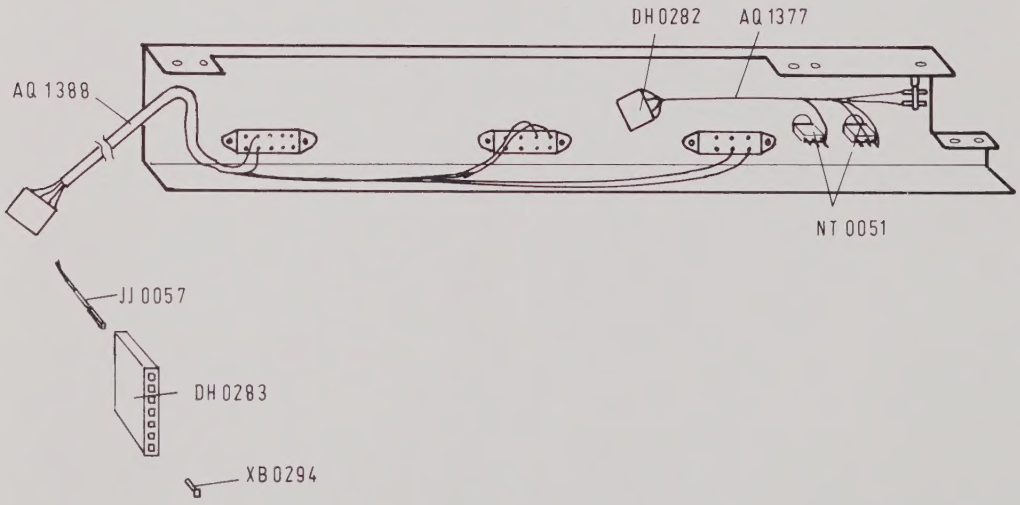
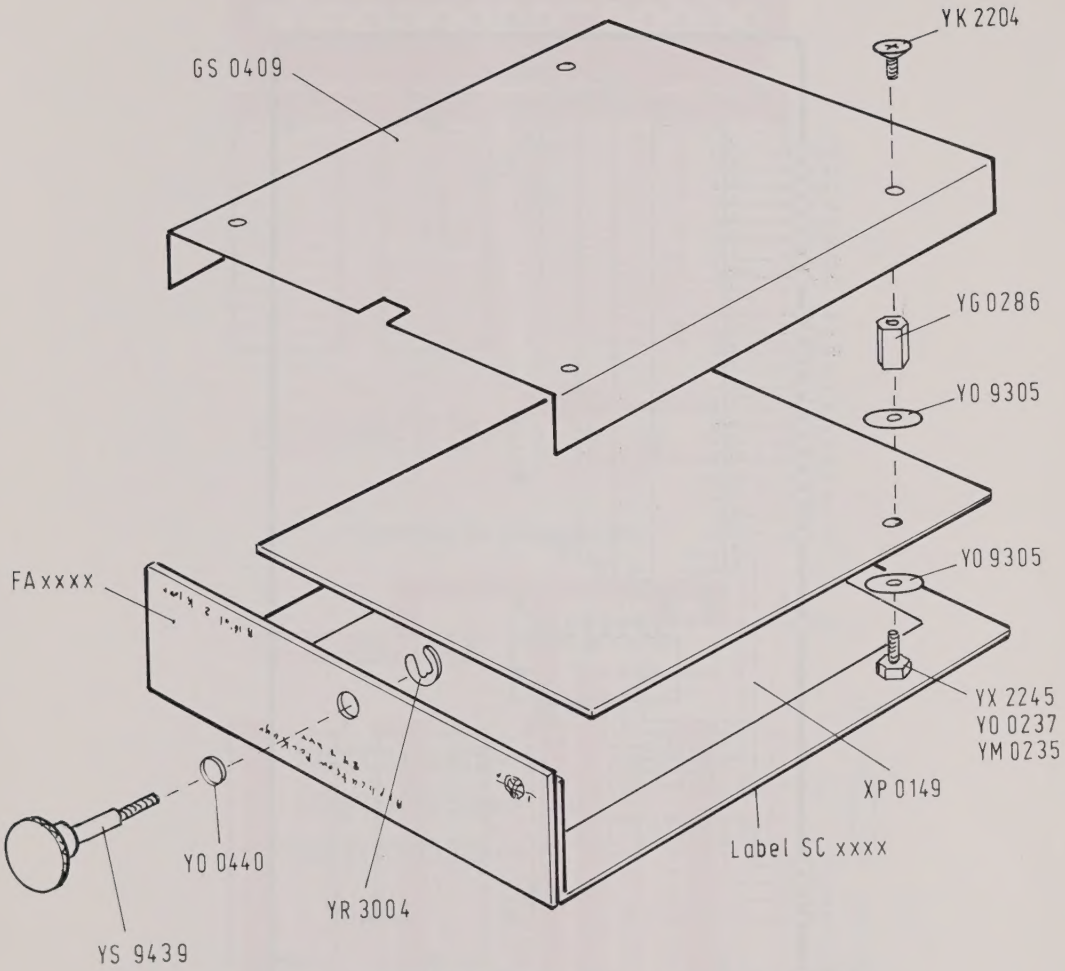

2 × 20cm ÆW 8798
YS 0476
FB 0479
DD 0212
DB 1993
DH 0355
YS 9302
FC 6432
JJ 0121
EC 0026
GV 1873
GV 1875
FC 6429
GV 1872
DZ 9645
DZ 9013
FC 6430
YC 0338
UA 0773
GV 1876
GV 1874
DM 0031
ZS 0306
GV 1875
NN 0152
DA 0060
GV 1872
FA 0830
NN 0025
DP 0556
YS 0235
FA 0832
ZG 0246
NN 0131
SN 0096
NT 0051
EC 0025
NN 0094
SN 0137
FA 0831
QV 4028

Back Panel ZN 0365

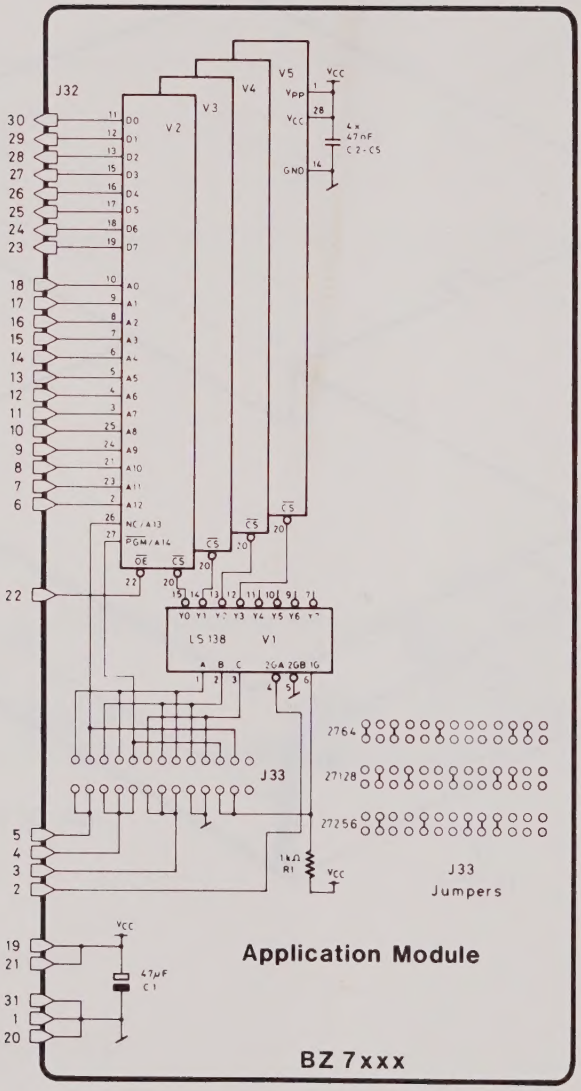


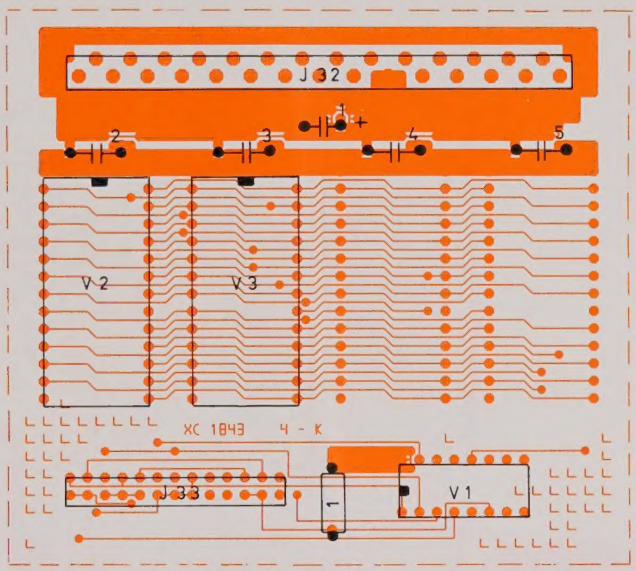
Front Panel ZN 0366



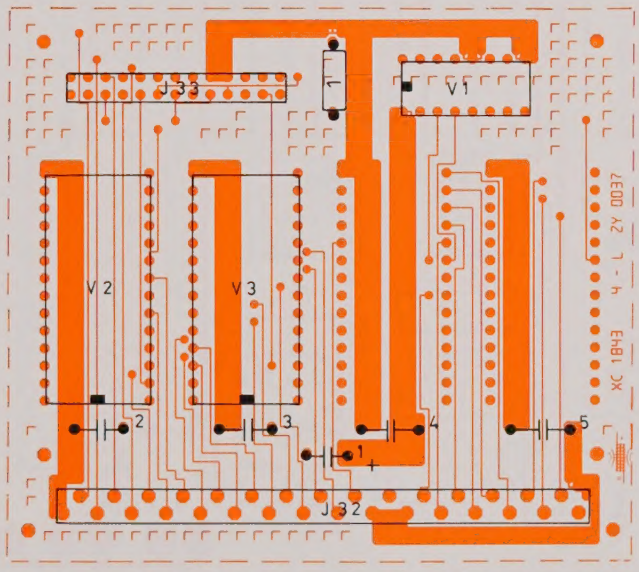


BZ	P.C. Board	PROM	F. Panel
7075	ZD 0423	V2 VP 1351 V3 VP 1355	FA 0840
7078	ZD 0424	V2 VP 1362 V3 VP 1363 V4 VP 1364	FA 0843


J32
V1
V2
V3
V4
V5
LS 138
J33
2764
27128
27256
J33
Jumpers
Application Module
BZ 7xxx



Viewed from the component side



Viewed from the solder side

ZD 0423

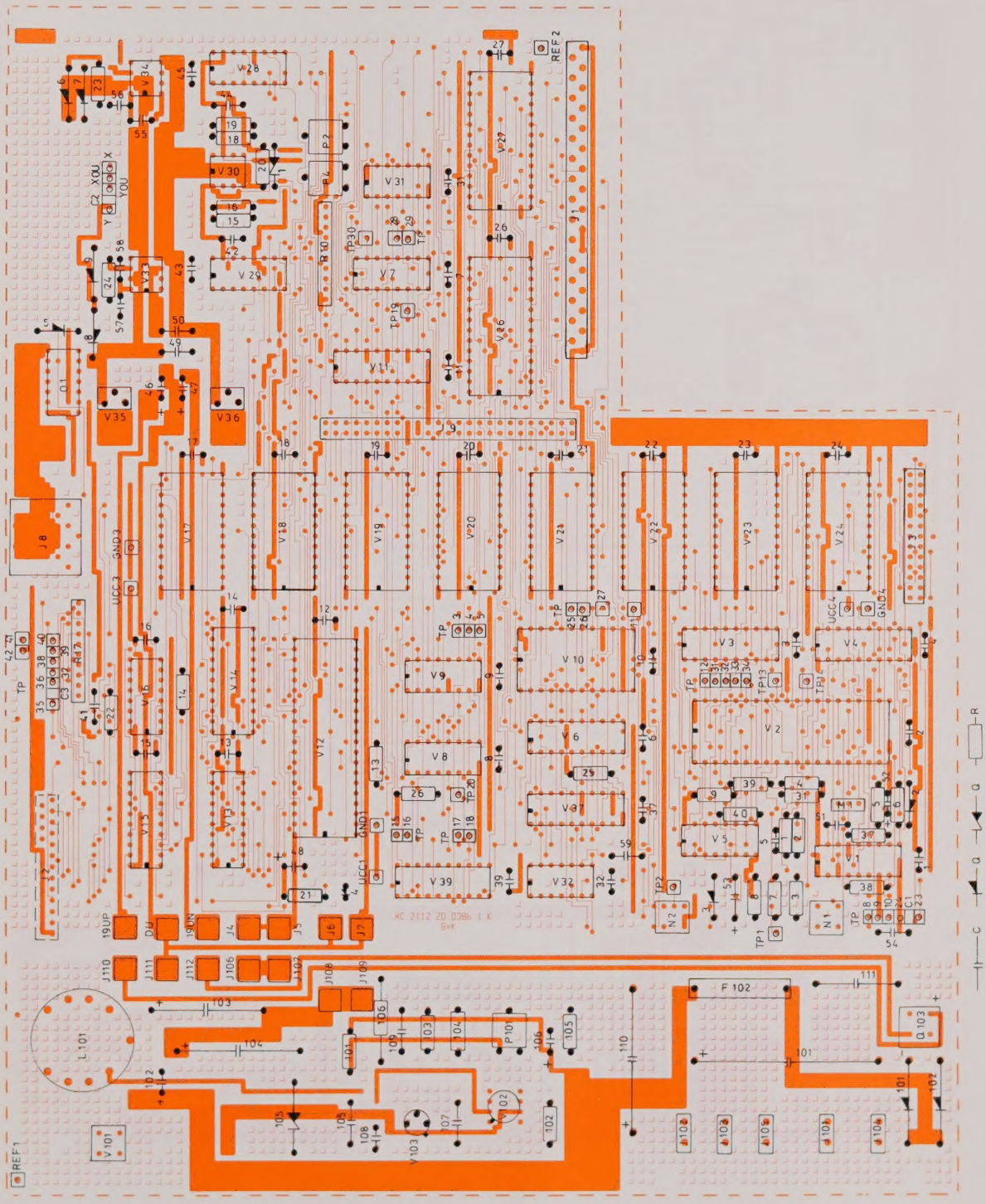
C 1	Electrolytic			47 µF/6,3 V	CE 0219	V 1	3 to – 8 Line Decoder	74LS138	VD 1055
C 2–5	Ceramic			47 nF/16 V	CK 9014	V 2	PROM	2764–3	VP 1351
						V 3	–	2764–3	VP 1355
J 32	26 pin–Plug				JP 2603				
J 33	31 pin–Plug				JP 3103		Printed Circuit Board		XC 1843
R 1	Carrbon	1/4 W	5%	1 kΩ	RB 3100				

ZD 0423

ZD 0386

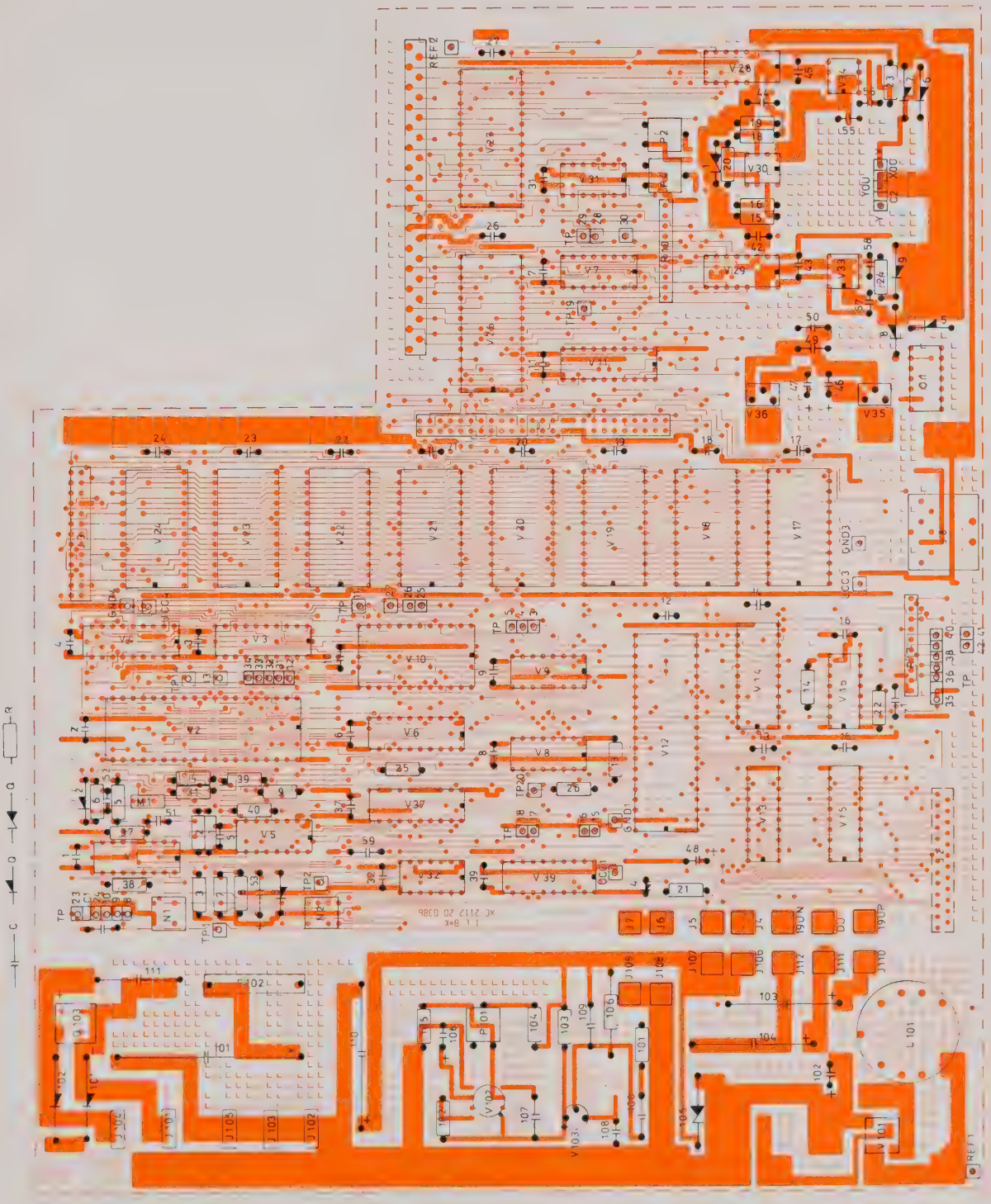
Main Circuit Board

LAYOUT DIAGRAM



Viewed from the component side

ZD 0386



Viewed from the solder side

ZD 0386

C 1-24	Ceramic			22 nF/63 V	CK 4224
C 26,27	-			22 nF/63 V	CK 4224
C 31,32	-			22 nF/63 V	CK 4224
C 37	-			22 nF/63 V	CK 4224
C 39	-			22 nF/63 V	CK 4224
C 41,42	-			100 nF/16 V	CK 5103
C 43	-		5%	22 pF/400 V	CK 1220
C 44	-		-	100 nF/16 V	CK 5103
C 45	-		5%	22 pF/400 V	CK 1220
C 46,47	Electrolytic		Solid	1 µF/40 V	CE 0483
C 48	-			47 µF/6,3 V	CE 0219
C 49,50	Ceramic			0,1 µF/16 V	CK 5103
C 51	-		5%	12 pF/400 V	CK 1120
C 52,53	Electrolytic		Solid	1,5 µF/25 V	CE 0484
C 54	Ceramic			100 nF/16 V	CK 5103
C 55-58	-			100 pF/400 V	CK 2103
C 59	-			100 nF/16 V	CK 5103
C 101	Electrolytic			2200 µF/40 V	CE 0452
C 102	-			47 µF/63 V	CE 0542
C 103,104	-			220µF/40 V	CE 0454
C 105	Polyester			22 nF/400 V	CS 0132
C 106	Electrolytic		Solid	1µF/40 V	CE 0483
C 107	Polyester			10 nF/400 V	CS 0129
C 108	Ceramic			180 pF/400 V	CK 2185
C 109	Polyester			100 nF/100 V	CS 0409
C 110	Electrolytic			2200 µF/6,3 V	CE 0215
C 111	Paper			100 nF/630 V	CP 0033
F 102	Fuse, slow			400 m A	VF 0039
J 1	Connector				JJ 3107
J 2	IEC Connector				JP 2504
J 3	26-pin Flatcable				JP 2603
J 8	8-pin plug				JJ 0806
J 9	50-pin Flatcable				JP 5005
L 101	Coil			100µH	LB 0918
M 1	Crystal			15 MHz	MB 0024
N 1,2	Push button				NT 0106
O 1	Relay				OC 0062
P 2	Cermet		lin.	2 kΩ	PG 2214
P 4	-		-	2 kΩ	PG 2214
P 101			-	2 kΩ	PG 2214
Q 1	Ze.	1N825		5,9-6,5 V/25 W	QV 1346
Q 2.3	Si.	1N4148		75 V/75 mA	QV 0216
Q 4	LED			3 V/20 mA	QV 4000
Q 5	Si.	1N4148		75 V/75 mA	QV 0216
Q 6-9	-	1N4004		400 V/1 A	QV 0237
Q 101,102	-	1N5402		200 V/3 A	QV 0212
Q 103	Bridge Rectifier			110B4	QV 0031
Q 105	Ze.	1N5907		6 V	QV 1901

R 1,2	Metal	1/4 W	1%	510 Ω	RF 2511
R 3,4	-	-	-	2,21 kΩ	RF 3221
R 5	-	-	-	1,00 kΩ	RF 3100
R 6	-	-	-	499 kΩ	RF 5499
R 7	-	-	-	100 Ω	RF 2100
R 8	-	-	-	499 kΩ	RF 5499
R 9	-	-	-	2,21 kΩ	RF 3221
R 10	Resistance Network			2,2 kΩ	RZ 6322
R 13	Metal	1/4 W	1%	10,0 kΩ	RF 4100
R 14	-	-	-	2,21 kΩ	RF 3221
R 15	-	-	-	10,0 kΩ	RF 4100
R 16	-	-	-	9,09 kΩ	RF 3909
R 17	Resistance Network			10 kΩ	RZ 6410
R 18	Metal	1/4 W	1%	9,09 kΩ	RF 3909
R 19	-	-	-	10,0 kΩ	RF 4100
R 20	-	-	-	1,21 kΩ	RF 3121
R 21	-	-	-	392 Ω	RF 2392
R 22	-	-	-	365 kΩ	RF 5365
R 23,24	-	-	-	100 Ω	RF 2100
R 25,26	-	-	-	2,21 kΩ	RF 3221
R 31	-	-	-	392 Ω	RF 2392
R 37	-	-	-	82,5 Ω	RF 1825
R 38-40	-	0,5 W	2%	1,00 Ω	RF 9210
R 101	-	1/4 W	1%	1,00 MΩ	RF 6100
R 102	-	-	-	15,0 Ω	RF 1150
R 103	-	-	-	8,06 Ω	RF 0806
R 104	-	-	-	6,81 kΩ	RF 3681
R 105	-	-	-	3,92 kΩ	RF 3392
R 106	Wire	2 W	10%	0,12 Ω	RO 1205

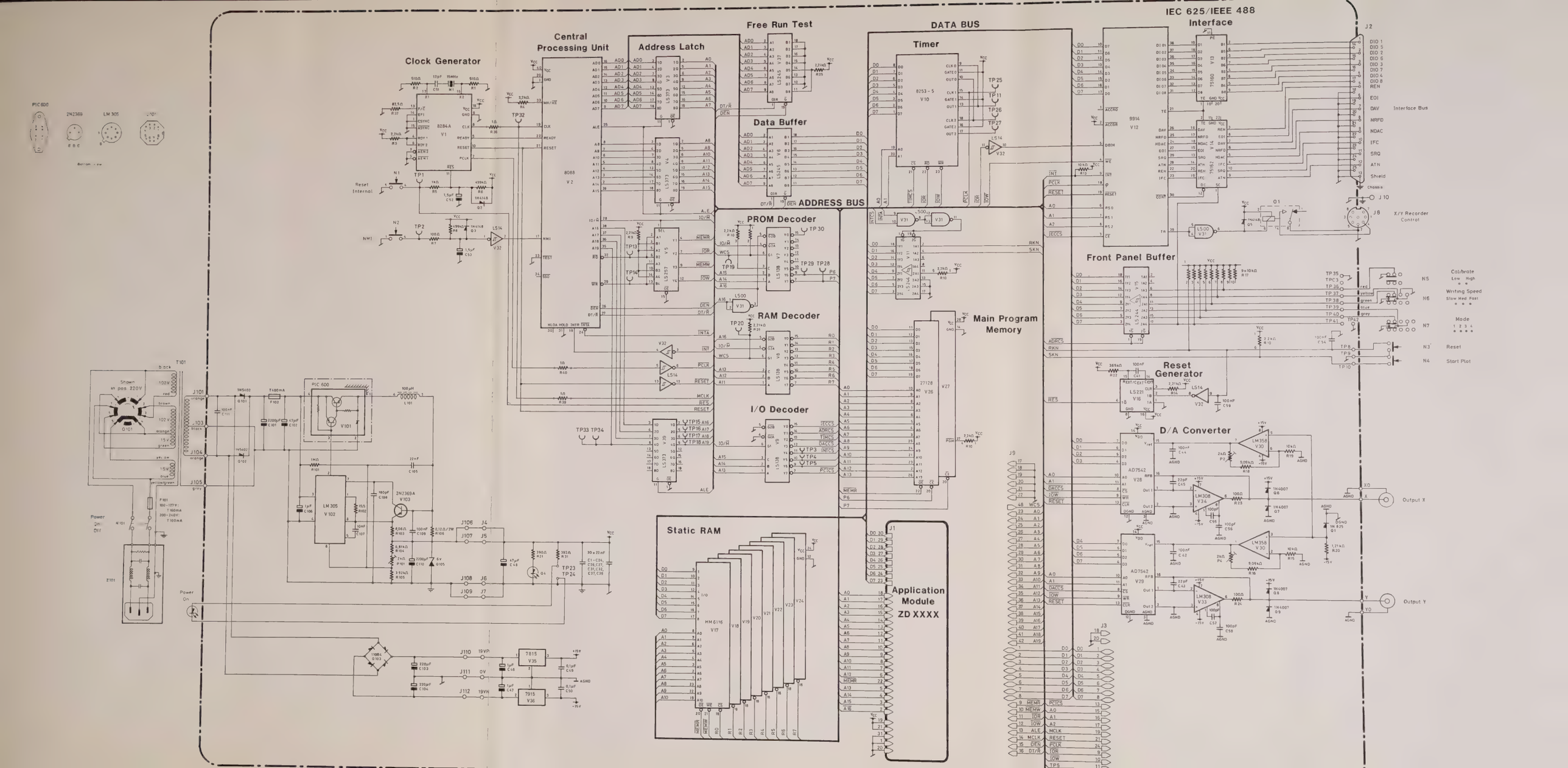
V 1	Clock Generator and Driver	8284A	VD 5020
V 2	8-Bit µProcessor	8088	VD 5021
V 3,4	8 × D Transparent Latch	74LS373	VD 1066
V 5	2-Inp. Mutipl.w/ 3/S Outputs	74LS257	VD 1103
V 6	3-state Bus Transciver	74LS245	VD 1093
V 7-9	3 to-8-line Decoder	74LS138	VD 1055
V 10	Program. Interval Timer	8253-5	VD 5018
V 11	8-Buffer	74LS244	VD 1087
V 12	IEC.625 Int.Bus Adapter	9914AN	VD 5016
V 13	Bus Transceiver	75160	VD 3012
V 14	– –	75162	VD 3013
V 15	8 × Buffer	74LS244	VD 1087
V 16	2 × MMV	74LS221	VD 1023
V 17-24	C Mos RAM	HM6116	VD 4011
V 26	PROM	27128-3	VP 1353
V 27	–	27128-3	VP 1354
V 28,29	12 bit D/A Converter	AD7542	VD 3028
V 30	Op. Amp.	LM358N	VE 0134
V 31	4 × 2 Input NAND Gate	74LS00N	VD 1033
V 32	6 × Schmitt Trigger INV	74LS14N	VD 1028

ZD 0386 Main Circuit Board

PARTS LIST

V 33,34	Op. Amps	LM308N	VE 0046
V 35	Voltage Regulator + 15 V	7815	VE 0096
V 36	Voltage Regulator ÷ 15 V	7915	VE 0097
V 39	8 × D Type Transp. Latch	74LS373	VD 1066
V 101	Hybrid Transistor Circuit	PIC600	VB 0594
V 102	Voltage Regulator + 5 V	LM305AH	VE 0015
V 103	Ge.	2N2369	VB 0513

16-pin Dil socket	JJ 1631
20-pin Dil socket	JJ 2017
24-pin Dil socket	JJ 2407
28-pin Dil socket	JJ 2801
40-pin Dil socket	JJ 4003
Spade plug for PCB.	JL 0080
Pin for plug	JL 1001
Fusesocket	JS 0016
Printed Circuit Board	XC 2112


Central Processing Unit
Clock Generator
Address Latch
Free Run Test
Data Buffer
DATA BUS
ADDRESS BUS
Timer
IEC 625/IEEE 488 Interface
PROM Decoder
RAM Decoder
I/O Decoder
Static RAM
Main Program Memory
Front Panel Buffer
Reset Generator
D/A Converter
Application Module ZD XXXX
Power On
Power On Off
Reset Internal
Interface Bus
X/Y Recorder Control
Output X
Output Y
Writing Speed
Mode
Reset
Start Plot
Calibrate

7509 Miscellaneous

Washer		DU 0118
Fuse, slow 200–240 V	100 mA	VF 0026
Fuse, - 100–127 V	160 mA	VF 0051
Spade plug		JL 0093
Transformer		TN 1030

Furthermore 7509 includes the following Subassembly the details of which can be found under:

Main Circit Board	ZD 0386

DOUGLAS AIRCRAFT COMPANY

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